# COST AND MANAGEMENT

PROFIT

## Deferred Profit-Sharing Plans . . . Everyone Profits

*By Sebastian A. Albrecht*

## Organizing for Cost Reduction . . . A Case Study

*By G. E. Morden*

## Accounting for Overhead in Defence Contracts

*By James H. Laing*

LOSS

***Official Journal of***

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**March, 1955**

# *Cost and Management*

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ORGANIZING FOR COST REDUCTION — A CASE STUDY

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Mr. Morden was a member of the armed forces during World War II, and was discharged as Captain, Radar Staff Officer in 1945. At Canadian Marconi Company, he held the position of Sales Manager of Broadcast and Television Receiver Division, Merchandising Manager, and Manager of Broadcast Television Receiver Division. The author then joined the Brinton-Peterboro Carpet Company in January 1953, and presently holds the position of General Manager of that Company.

ACCOUNTING FOR OVERHEAD IN DEFENCE CONTRACTS

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The author joined the Hussmann Refrigerator Co. Ltd., Brantford, in February 1953 in the capacity of Supervisor — Aircraft Accounting, and subsequently was appointed Comptroller. He has gained varied experience in the field of defence cost accounting, but has concentrated his efforts on overhead control as it pertains to the aircraft industry. He is a charter member of the Brantford Chapter of N.O.M.A. Mr. Laing will write his final examinations this year for R.I.A. qualification.

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# *Editorial Comment . . .*

## "MANAGEMENT ACCOUNTING"

Management accounting is a relatively new term and as such it has suffered both from misinterpretation and misuse. Practically everyone is beginning to use it, and as usual with a phrase such as this, with the rather grand manner, it becomes the subject of speeches and articles ad infinitum.

It is refreshing therefore, to review a concise appraisal of Management Accounting by the Technical Research Committee of the Association of Certified and Corporate Accountants in England.

Not the least interesting is the fact that the British Management Accounting team who visited the U.S. in 1950 probably first coined the term. In any case, since their published report the phrase has come into popular use.

As defined by the Certified and Corporate Accountants, management Accounting is:

> " . . . The application of accounting and statistical techniques to the specific purpose of producing and interpreting information designed to assist management in its functions of promoting maximum efficiency and in envisaging, formulating, and co-ordinating future plans and subsequently in measuring their execution . . . "

A full discussion of the subject is presented under the general framework of objectives scope, methods, and accounting organization.

In brief point form, objectives of management accounting are stated as follows:

(i) To provide information to management covering a plan for the future.

(ii) To express these plans financially and in terms of individual responsibilities.

(iii) To report on the effectiveness of the organization and methods used in carrying out the plan.

(iv) To compare performance with plans, at suitable intervals.

(v) To report to management on the extent to which the plan has been carried out.

Truly a Magna Charta for any executive accountant.

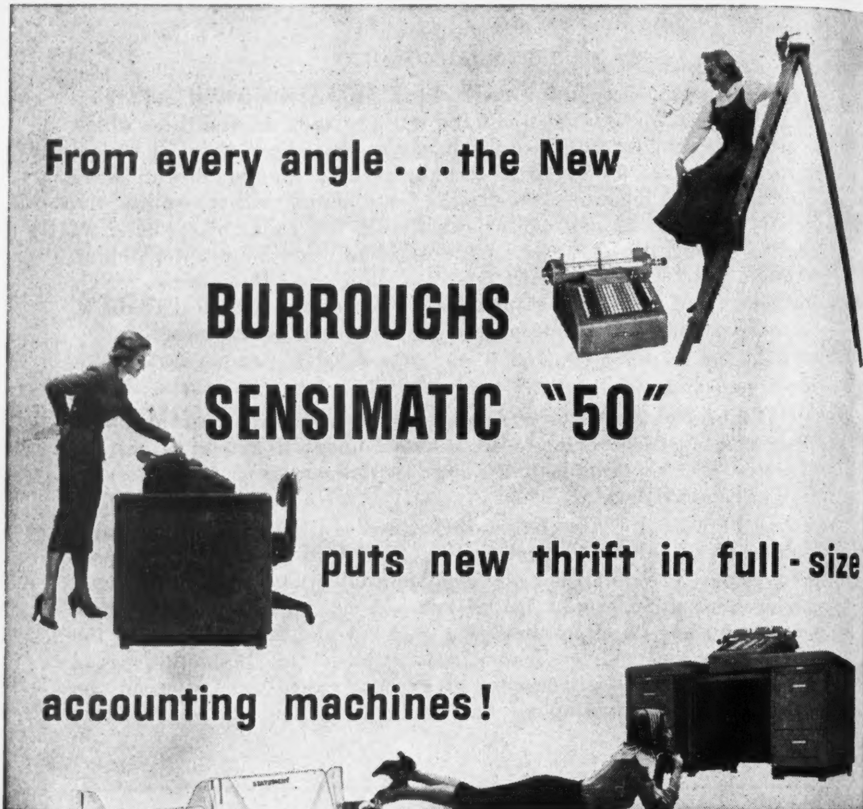
The paper states that the scope of management accounting covers all business activity mainly because of the essentiality of translating all activities into the common denominator of money. This is not to suggest that the statistical report be missed by the accountant. They have a very great use and are complementary to most strictly financial statements.

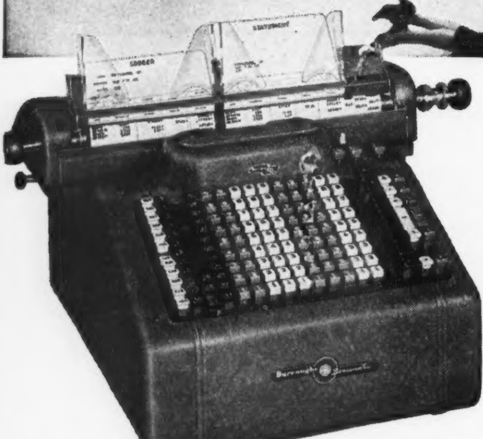
Management accounting methods are generally divided into those which assist in formulating plans and setting standards, and those which assist in measuring actual performance against these plans and standards. Here all the familiar techniques of a modern comptroller's department are mentioned, budgeting for planning and controlling the future — marginal costing for calculating the profitability of short runs — changing volume and patterns of turnover — profit planning for maintenance of liquid assets — standard costs for measuring performance, and the use of graphs, Gantt charts, and statistical methods, are all drawn to our attention as part of managerial accounting.

The final section deals with the all-important question of accounting organization.

It must be geared for a high speed system of reports, from board chairman to charge hand. All accounts, financial and cost must be operated as a single unit, and policy in this matter at least must be from a common head.

In 19 pages, the Association of Certified and Corporate Accountants have made a scholarly condensation of the subject of management accounting. The report is a dignified and well-written appraisal of what modern accountancy can be. It should be read by all executive accountants as a check on their own efficiency and understanding of the service they can render to management at all levels. It should be read by all accountants as a matter of encouragement and pride in the stature to which accountancy has come in these middle years of the twentieth century.



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# *C & M Round-Up . . .*

By N. R. Barfoot, R.I.A.

### Credit Unions

These are a few facts about credit unions and their influence in Canada.

These baby financial institutions found in all ten provinces are in greatest number in Quebec.

The first credit union came into existence in Levis, Quebec, in 1900.

Total assets now amount to 500 millions — membership 1.4 million and number of individual unions, 3,600.

There are about 1,700 groups in rural areas and close to 1900 in the urban and industrial centres.

They are similar to other financial institutions such as banks and trusts, in that they accept Savings deposits, and make loans.

They differ from regular banks in that they require members to save small amounts at regular intervals, shares in the language of the credit union. Savings can be withdrawn by use of the deposit pass book, but no cheques may be drawn on a credit union.

If demand for loans is not in balance with the lending power of a local credit union, the group may turn to its provincial credit union league. Surplus money is in turn deposited with the central body by the locals.

Savings in credit unions averages $328.00 at the beginning of this year.

Interest rates on loans are 1% per month on the unpaid balance. Interest on savings averages about 3%.

Savings by members are insured dollar for dollar up to the $1,000 limit.

Credit unions are primarily designed to provide short term credit, although some long term mortgages are now being accepted as the liquid assets grow.

### Capital Expenditure—1955

A forecast of capital outlay for this year totals $5,808,000,000. This compares to the record $5,841,000,000 in 1953. The 1954 figure was $5,498,000,000. These are the predicted figures for 1955 and comparative amounts for 1954 and 1953 in round millions:

| | 1955 | 1954 | 1953 |
|---|---|---|---|
| Housing | 1,283 | 1,169 | 1,084 |
| Other construction | 2,472 | 2,276 | 2,324 |
| Mining and oil wells | 309 | 249 | 257 |
| Machinery and equipment | 1,744 | 1,804 | 2,176 |
| | 5,808 | 5,498 | 5,841 |

Government spending is estimated at 1,739 millions for this year. It was 1,593 millions in 1954, and 1,632 millions in 1953.

Total repair bill for 1955, as submitted by 16,000 business firms across the country, shows an expenditure of over 2 billion this year. This is slightly less than the 2.050 billicns in 1954 and 2.098 in 1953.

### Travel and Transport

Did you know that:

More people travelled by air last year than by sea. 580,000 flew the Atlantic in 15,000 flights, an average of 1 flight every half hour.

72,000 tons of mail was carried by plane to and fro across the Atlantic.

The world's airlines carried 44 million people in 1954.

In 1946 only 1% of Canadian locomotives were diesels.

Today 20% are powered by diesel electric.

Operating costs for diesels are one half that of steam locomotives—a modern diesel railway engine pays for itself in 3 to 5 years.

Hauling freight by diesel power requires 1 to 1.5 h.p. per ton, trucks need 15 to 25 and aircraft 100 to 250.

### Your 1955 Canadian Furniture

Will be made by some 1,577 factories, employing 27,000 people, earning some 66 millions. Total value of production this year will be well over 100 millions.

In 1939, there were 493 furniture establishments in Canada, employing 13,000 people, who earned less than 13 millions in salaries and wages. Total output was a little over 20 million.

### The Canadian Oil Industry

Here are a few up-to-date figures on the extractive side of this important segment of Canadian business.

During 1954, an average of 261,590 barrels a day was produced, practically all from Western Canada.

Pipe lines now carry oil as far east as Sarnia, Ontario, and west to Vancouver, British Columbia.

Present wells could satisfy 70% of Canada's current crude consumption of 560,000 barrels a day.

Proven reserves are now estimated at 2,500 million barrels.

Gas reserves are estimated at 17.4 trillion cubic feet — 13.4 in Alberta — 3 in B.C. and 1 in Saskatchewan. Additional reserves at the rate of 1.5 trillion cubic feet per annum are being discovered.

Some of the problems are:

What to do with the butane and propane which must be stripped from natural gas, as well as large quantities of sulphur. However, petrochemical industries will probably be developed to make use of these by-products.

**Toll Roads?**

Where do you stand on the question of toll roads in Canada? At least, here are some of the factors:

Our U.S. neighbours have 2,000 miles of pay-as-you-go toll roads, 10,000 additional miles have been authorized or proposed. 50 millions were realized in revenue last year.

Canada needs new super-highways, but road appropriations can't begin to pay for them.

Toll rates run about $1\frac{1}{2}$ cents per mile.

It is not obligatory to use them, since they usually exist side by side with old free highways.

If the government use all the revenue from gasoline and auto taxes they would not need the tolls, say some authorities.

It is a form of double taxation, to pay high motor tax and tolls as well.

Toll roads are apt to be used as revenue getters, instead of merely a means to pay off the bonded debt of the road and maintenance.

Truckers usually find toll roads very expensive.

It seems that unless high year round traffic volume is maintained, the toll road can be a loser.

# The 34th Annual Cost and Management Conference of the S.I.C.A. of Canada

## Royal Alexandra Hotel, Winnipeg, Manitoba

## June 27th to 30th.

—o—o—

The Theme: WHERE DO WE GO FROM HERE?

—o—o—

Monday, June 27th — The Opening of the OFFICE EQUIPMENT SHOW

Tuesday, June 28th (afternoon) — Control of Operations Through Effective Organization

Human Relations Aspect of Financial Controls

Wednesday, June 29th (morning) — Planning and Controlling Distribution Costs — A Means of Reshaping Distribution to the Changing Economy.

Economic Management of Inventories

Thursday, June 30th (morning) —

Concurrent Group Discussions (3 groups as follows):

1. Wholesale and Retail Distributing
2. Service Industries.
3. Manufacturing

Subject: An Appraisal of Financing Policy in a Buyer's Market

# *Books in Review . . .*

## COST ACCOUNTING

*by Theodore Lang, Walter B. McFarland, Michael Schiff* 786 *pages, The Ronald Press,* $6—*New York,* 1953.

Reviewed by DR. MICHAEL ALBERY,
**Professor of Finance and Economics, Boston College**

All three authors are certainly well qualified for writing of this new text. Professor Lang has been connected with the N.Y. University since 1922, is a C.P.A. with a wide experience in industrial and public accounting. Professor McFarland is a lecturer in Accounting at Columbia and the research supervisor at the N.A.C.A. Professor Schiff, C.P.A., is connected with New York University since 1946 and is the author of numerous papers in the field of cost and industrial accounting. Six chapters of the book are devoted to a discussion of the principles, seven to the discussion of cost elements, seven to cost systems and seven to managerial cost analysis. At the end of every chapter the authors have compiled discussion-provoking questions and the last 130 pages of the book contain well conceived problems. Several problems have been prepared for each chapter, so the teacher using the text has a choice of various assignments he can give to his class. All problems may be assigned in connection with the study of more difficult chapters and only one or two in connection with the study of the easier ones.

Most appealing to this reviewer are the chapters on budgetary controls, cost reports and profit planning. The authors should be congratulated for the inclusion of a special chapter on Distribution Cost, a field to which unfortunately too little attention is being devoted in the texts and in the schools which offer a major in marketing. A comprehensive teacher's manual, containing 200 forms and charts is available for Faculty members.

The Ronald Press has brought into the market a text book which contains many helpful teaching features and which is up-to-date. The book will certainly be well received by students, teachers as well as by practitioners, who are anxious to refresh their knowledge and who are in search of suggestions and of new concepts.

## PERSONALS

*Mr. V. K. Downer, R.I.A.*, formerly of G. H. Wood and Co. Ltd., has, with Mr. Wally Evans, purchased control of S. F. Lawrason and Company in London, Ontario, as from January 1st this year.

*Mr. E. W. King, R.I.A.*, of Canadian Chain Belt Limited, Willowdale, Ontario, was appointed Chief Accountant of that company on February 18th

# *Deferred Profit-Sharing Plans—Everyone Profits* . . .*

By SEBASTIAN A. ALBRECHT,
*Partner—S. A. Albrecht Company,
Certified Public Accountants,
New York*

*The author sees profit-sharing as advantageous and profitable to the company and its employees, alike. Mr. Albrecht gives a concise description of the setting up of a profit-sharing plan, the information necessary for its formulation, and the system of determining the amount of the employees' contributions against those of the company.*

ONE of the oldest definitions of a profit-sharing plan is one adopted by the International Cooperative Congress at a meeting in Paris in 1889, which reads as follows: "An agreement freely entered into by which employees receive a share, fixed in advance of the profits." This definition brings out clearly the essential elements of a true profit-sharing plan as distinguished from bonuses, presents, etc., that are frequently referred to as profit-sharing plans. The principal difference, of course, is that conventional bonus payments are given by employers at their discretion after the operating results are known, while the profit-sharing concept involves announcing beforehand that a predetermined percentage of the organization's profits will be set aside for the benefit of employees, and that it will be theirs as a matter of right. Organizations that have adopted true profit-sharing plans are firmly convinced that they provide the best method possible of offering employees a sense of dignity and some elements of the incentive and drive that go with full ownership and management.

An "Employees Profit Sharing Plan" is defined in Section 79, Subsection (1), of the Dominion Income Tax Act as "an arrangement under which payments computed by reference to his profits from his business are made by an employer to a trustee in trust for the benefit of officers or employees of the employer (whether or not payments are also made to the trustee by the officers or employees) and under which the trustee has, since the commencement of the plan or the end of 1949, whichever is later, each year allocated either contingently or absolutely to individual officers or employees

(a) All amounts received by him from the employer, and

(b) all profits from the trust

in such a manner that the aggregate of all such amounts and such profits minus such portion thereof as has been paid to beneficiaries under the trust is allocated either contingently or absolutely to officers or employees who are beneficiaries thereunder."

The fundamental requirements of a plan are:

(1) There must be a trust deed, in which the employer stipulates the amount he will pay to the trustee and the employees who will participate under the plan. There is no requirement that the trust must be approved by the Income Tax Department.

*EDITOR'S NOTE: The original article, as prepared by Mr. Albrecht, has been amended where necessary to conform to Canadian Income Tax requirements.

(2) The payments to be made by the employer must be computed by reference to the business profits of the employer.

(3) All amounts received by the trustee from the employer plus profits or interest on the fund must be allocated to the participating employees each year. The allocation may be absolute, entitling the beneficiary to immediate payment, or may be contingent so that payment may be made only on fulfilment of a condition such as a lapse of time.

Payments into the fund may also be made by the employees.

Amounts paid by an employer to a trustee under an employees profit sharing plan during a taxation year may be deducted in computing the employers income for the taxation year. (Section 11, subsection 1 (r) and Section 79, subsection 4).

No tax is payable by the trust on receipts of the fund either from the employer or employee, or from earnings of the fund (Section 62, subsection 1 (r) and Section 79, subsection 2).

Any amount allocated in the year by the trustee to an employee who is a beneficiary under the fund must be included by the employee in computing his taxable income for the year. This applies whether or not payment of the amount is made to the employee. Allocations which represent a return of contributions previously deposited by the employee with the trustees are excepted (Section 79, subsection 3).

Payments received by an employee from the fund are not taxable income of the employee, except any amount which exceeds the sum of (1) amounts allocated to the employee which have been included in computing his taxable income in current or prior years plus (2) payments made by the employee to the trustee (Section 79, subsections 5 and 6).

**Setting Up the Plan**

The mechanics of setting up the plan should be handled jointly by the corporation's attorney, chief accountant or comptroller and the head of the labour relations department. Small firms very frequently avail themselves of the services of their independent accountants and labour relations consultants to handle the functions of the corporate comptroller and head of the labour relations department. The general information requested by these specialists so that an appropriate plan may be formulated is as follows:

1. Date of ending of fiscal year.
2. Length of employment required for employees to participate.
3. Whether all employees who have been employed for that length of time are to participate or whether only certain classes of such employees are to participate, and if the latter, what employees.
4. Whether hourly employees or any other class are to be excluded. excluded.

5. How long after the employees become Participants are their shares to vest.
6. Age of retirement — preferably 65.
7. How many on the Supervisory Committee — preferably three.
8. Are the Supervisory Committee members to be officers, directors and employees, and if so, the number from each group.
9. The amount of profits to be reserved and percentage of profits to be appropriated from the remaining income.
10. Estimated amount of appropriation.
11. Number of employees participating.
12. Number of employees excluded and the reason.
13. Estimated payroll of participants.
14. Estimated payroll of all employees.
15. Name and address of Trustee.

After the above questions have been resolved satisfactorily and the trust agreement drawn by the attorney has been approved by the advisors in charge of formulating the plan, it should be submitted to the corporation's board of directors or stockholders, or both, for their formal approval. Following this, a supervisory committee must be selected. This committee usually consists of three members, one being a representative of the employees, one a representative of management and one "outside" person. The last named committee member is frequently the company's attorney, or an official of the trust corporation, if one is to be selected to administer the fund.

### Administration

After the plan has been approved, the mployees who are eligible to become participants are required to fill out and sign acceptance forms submitted to them by the advisory committee, agreeing to be bound by the terms of the plan. This acceptance form outlines the employees rights under the plan, and generally includes space for the naming of beneficiaries.

Typical eligibility requirements provide that full time employees are entitled to participate in the benefits of the plan after they have served for two years with the corporation. Most plans also provide that employees who once become participants will remain as such as long as they are continuously employed by the corporation. Special provision is usually made for employees to retain their eligibility rights for temporary leaves of absence caused by illness, or by service in the Armed Forces.

The amount of the annual contribution by the corporation into the trust is usually determined by allocating thereto a fixed percentage of annual net operating profit before taxes but after deduction of a sum to provide for a fair return on invested capital at the beginning of the fiscal year.

## DOE MANUFACTURING CORPORATION

### TABULATION WITH RESPECT TO EACH OF THE 25 HIGHEST PAID EMPLOYEES

| | Name | Duties | Year of Birth | Years of Service | Basic Salary | Other Payments | Total | Service Points | Salary Points | Total Points |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Doe | President | 1904 | 4 | 25,000 | 8,194 | 33,194 | *4 | 250 | 254 |
| 2. | Smith | Treasurer | 1910 | 4 | 25,000 | 4,855 | 29,855 | *4 | 250 | 254 |
| 3. | Jones | Asst. Supt. | 1914 | 4 | 5,676 | | 5,676 | 4 | 56 | 60 |
| 4. | Brown | Supt. | 1910 | 3 | 6,560 | | 6,560 | 3 | 65 | 68 |
| 5. | Green | Foreman | 1924 | 2 | 6,404 | | 6,404 | 2 | 64 | 66 |
| 6. | Black | Foreman | 1917 | 3 | 5,312 | | 5,312 | 3 | 53 | 56 |
| 7. | Sanders | Foreman | 1920 | 2 | 5,312 | | 5,312 | 2 | 53 | 55 |
| 8. | Street | Foreman | 1919 | 2 | 5,184 | | 5,184 | 2 | 51 | 53 |
| 9. | Jackson | Foreman | 1915 | 3 | 4,740 | | 4,740 | 3 | 47 | 50 |
| 10. | Perry | Prod. Cont. | 1911 | 2 | 4,116 | | 4,116 | 2 | 41 | 43 |
| 11. | Moore | Foreman | 1891 | 2 | 3,700 | | 3,700 | 2 | 37 | 39 |
| 12. | Olsen | Off. Mgr. | 1908 | 2 | 3,700 | | 3,700 | 2 | 37 | 39 |
| 13. | Day | Pur. Agt. | 1923 | 2 | 3,700 | | 3,700 | 2 | 37 | 39 |
| 14. | Morris | Maint. | 1906 | 2 | 4,700 | | 4,700 | 2 | 47 | 49 |
| 15. | Manning | Mech. | 1915 | 3 | 3,972 | | 3,972 | 3 | 39 | 42 |
| 16. | Albans | Mech. | 1927 | 2 | 3,764 | | 3,764 | 2 | 37 | 39 |
| 17. | Hill | Mech. | 1916 | 2 | 3,743 | | 3,743 | 2 | 37 | 39 |
| 18. | Johnson | Mech. | 1889 | 2 | 3,972 | | 3,972 | 2 | 39 | 41 |
| 19. | Racer | Mech. | 1894 | 3 | 3,660 | | 3,660 | 3 | 36 | 39 |
| 20. | Steele | Mech. | 1890 | 4 | 3,244 | | 3,244 | 4 | 32 | 36 |
| 21. | Starr | Maint. | 1898 | 3 | 2,828 | | 2,828 | 3 | 28 | 31 |
| 22. | O'Neill | Mech. | 1920 | 2 | 2,516 | | 2,516 | 2 | 25 | 27 |
| 23. | Wagner | Mech. | 1922 | 2 | 2,516 | | 2,516 | 2 | 25 | 27 |
| 24. | Williams | Mech. | 1917 | 2 | 2,516 | | 2,516 | 2 | 25 | 27 |
| 25. | Wayne | Mech. | 1920 | 2 | 2,516 | | 2,516 | 2 | 25 | 27 |
| | TOTALS | | | | 144,351 | 13,049 | 157,400 | 64 | 1436 | 1500 |

*—Maximum salary allowed under the Plan is $25,000.00.

The above shows how the Plan would have worked had it been in effect in 1953.

FIG. 1

The participants' shares may be computed by assembling the length of service and salary points of each, and dividing the total into the corporation's contribution for the fiscal year. The resulting figure representing the point value for the period, is then multiplied by the number of points to the credit of each participant to arrive at his dollar value share of the total contribution. The tabulation of statistical data (Fig. 1) shows an example of how the point system works. In that case, employees were credited with one point for each year of service with the employer and one point for each one hundred dollars of basic compensation.

**Summary**

For employees, deferred profit-sharing plans provide financial stability by permitting them to create sizeable personal estates for retirement purposes, something most employees find impossible to do by private means. They also create an atmosphere of security and peace of mind, in that employees come to think of their shares of the trust funds as being immediately available for important emergencies.

For employers, experience has shown that profit-sharing plans contribute greatly to the spirit of teamwork that is so essential to the success of an enterprise. It has also demonstrated that deferred plans are more valuable than cash plans because of their greater provision for permanent employee security. The feeling of company loyalty that goes with security and incentive continues to grow year after year as employees' interests in the funds increase. In the long run, cost reductions and greater productivity brought about by the spirit of profit-sharing, often provide retirement benefits equal to those furnished by conventional pension plans, without reducing the amount of dollar net profits remaining for the stockholders. Moreover, this is accomplished without committing the enterprise to meet fixed annual obligations regardless of the profitability of operations.

In a few words, profit-sharing works for all groups. It is truly the democratic approach to the problem of creating better standards of living through greater productivity for all our people. It can and should be a potent factor in meeting the freedom restricting and oppressive doctrines preached by governments behind the iron curtain.

## BOOKS FOR FURTHER READING

THE CASE FOR PROFIT SHARING—Sartell Prentice, Jr., N.A.C.A. Bulletin, January 1952, Sec. 1.

OUTLINE OF A PLAN FOR PROFIT SHARING—D. D. Irwin, Canadian Chartered Accountant, June 1954.

PLANNING FOR PENSIONS AND PROFIT SHARING—J. Fraser Coate, C. & M., October 1953.

PROFIT SHARING PLANS IN INDUSTRY—Robert L. Rowe, Reprint from the Harvard Business Review.

A PROFIT SHARING RETIREMENT PLAN—J. G. Sidak, N.A.C.A. Bulletin, October 1953, Sec. 1.

# *Organizing for Cost Reduction—A Case Study* . . .*

By G. E. Morden,
*General Manager,*
*Brinton-Peterboro Carpet Co., Limited*

*The author emphasizes the importance of management receiving guidance, and not merely information, from the cost accountant. It describes the installation of a new cost accounting system in a process type industry, with a summary of the advantages and the techniques used by management when embarking on a cost reduction programme in soliciting the assistance of all department heads and foremen.*

CHANGING times are bringing all the functions of business closer together because of the vital, even mandatory need for close co-operation. Nowhere is the closer co-operation and understanding more important than between the Marketing People and the Cost Accountant.

It was not very long ago that the major problems in business rested with the manufacturing people. We were in a seller's market and the procurement of raw materials, adequate skilled labour and tools were the big headaches of the day.

Now all this has changed, and we have moved into the buyer's market that most of us had forgotten about. We had forgotten the rules of the game, and now the problems were all different. We had a marketing problem:—

How adequate is our distribution setup?
Are the old sales policies any good?
How is the product line?
How is our pricing?
How are our costs?

The big job is to make sure we have the right product at the right price, in the right place at the right time, in the right quantity.

Here is where the Cost Accountant and the Marketing Man join forces. How can we improve the appearance of the product, hold its quality and at the same time take some cost out of it? This is quite a trick but at first the opportunities were legion, the old seller's market had not posed this kind of a problem, and very little had been done about it.

Now began the separation of the men from the boys, the ones who learned the new rules the quickest began to make real progress and stepped u pthe pressure on the remainder of the industry, and today, there are very few companies who have not had or are not having a real hard look at their costs, their product line, and their whole marketing setup.

## The Need for Guidance

My subject is "Management and the Cost Accountant Today", and I have a specific message you have heard before in one form or another.

* This paper was presented in the form of an address, by Mr. Morden, at the January meeting of the Peterboro Chapter.

This message is "Give your Management guidance, not just mere information. Don't be proud of long rows of neat marching figures unless these figures can be distilled into a brief presentation that tells Management in which direction to move, to effect the proper correction." If the figures cannot be assembled in such a way as to provide guidance, somebody is wasting a lot of time.

I am going to try and provide you with some examples as I go along. I believe I can best get my message across by weaving it into a story of our own particular problems at Brinton Carpet.

First of all, let me paint in a little background of our company. The company was founded about 45 years ago. The modest beginning took place in an abandoned sugar beet factory which still forms part of the present building group of our Peterborough Weaving Mill. We employ roughly 250 people in Peterborough, and 50 people at our Lindsay Spinning Mill.

We are a process type industry. Our raw materials are wool, jute and cotton yarn, dye stuffs and other chemicals. We start practically from scratch to make our product, the labour content is high, and we have a very large number of processes which means, of course, that the accounting problems go up proportionately.

We sell on a national basis, having Sales Offices in Montreal, Toronto, London, and Vancouver. Our major problem is to get our costs down so that we can compete with imports coming in from countries enjoying lower labour rates.

Up until about two years ago the *guidance* provided by our cost accounting system was pretty broad. It was typical of the kind of cost accounting carried out in many industries and which was adequate for the period served, — before techniques were developed which could economically provide sharper cost information. And why was this important? Not because someone wanted the satisfaction of *knowing*. It was important because it provided the *guidance* in respect to taking cost *out of the product,* and channelling efforts in the most profitable direction. We used to get cost guidance from process costs developed over a six month period. Every six months inventory was taken and our earning position determined. This business of flying blind for so long is now pretty antiquated and inadequate.

We have been studying and changing the setup for about two years and are far from through yet. In our studies we have learned a great deal. We now have our inventories on a perpetual book basis and generate process cost data monthly so that knowledge of our earning and cost position is on a current basis. I cannot say I particularly like what I see these days, but at least, we are getting guidance as to which direction to take. Even if that direction takes us into pretty rough waters, we can splash around to see what the extent of the basic problems are.

It is so easy to get more information than is required or is useful; again it is guidance we need, not information. Let us look at the guidance provided by our speedometer in the car — one must fit the guidance to the circumstance. For example, if you want to measure the distance from the house to the office you use the tenth mile indications because they give guidance which is useful. From knowing the distance to the tenth of a mile, you can compare notes with your neighbour as to how long it might take to walk to work versus his time, etc. On the other hand, if you are measuring the distance between Montreal and Toronto, you couldn't care less how many tenths of a mile were involved, because it wouldn't provide any guidance as to how long it would take to drive, or how much gas you would consume, etc. In this case, just knowing how many miles would be adequate.

It is like that in business, we must decide how sharp the information must be to provide us with the guidance we need?

**Cost Centres**

I have a couple of examples in our own case. We began in our early accounting adventures by establishing cost centres for everything which could be identified as a process. In our Dye House we had seven such cost centres. Our approach has been to review all of the cost centres to see which ones provide us with guidance. It has been our theory that by this approach we will be more likely not to miss anything useful.

In this particular case on re-examination we found we could use only three cost centres — and why? Well, first of all, we had:—

Raw Stock Scouring
Skein Scouring
Raw Stock Dyeing
Yarn Dyeing
Extracting
Raw Stock Drying
Yarn Drying

The information required was the cost of dyeing per pound for use in estimates both by skein dyeing and stock dyeing techniques, plus the cost of raw stock scouring because we do some of this on a commission basis for others and, of course, we like to know what our costs are.

In addition to this, the problem of assigning the costs to seven centres was beyond what one could reasonably expect from our Dye House Supervisor unless we provided him with the services of a Timekeeper. This, of course, is undesirable for obvious reasons. The workers in the Dye House, with the exception of one or two, function on almost any job and are changed from job to job very frequently during the day as occasion demands.

By using seven cost centres we were not only getting unreliable information, but information in detail we did not require.

One more example has to do with our beaming inventory in Works & Process. A beam is nothing more than a big metal spool which varies in width from 27″ up to maybe 6′, and on which is wound either jute or cotton yarn. These beams are placed in the back of the looms, the yarn is fed in, and woven in as part of the backing of the carpet.

When inventory is taken, the routine has been to estimate the amount of yarn on each beam.

The thought was to improve the accuracy of this estimate by fixing lines on the inside flange of the beams indicating the amount of yarn still remaining.

We investigated the problem of doing this and found it to be considerable. First of all, there are some 250 odd beams to be marked. In order to mark them it would be necessary to stop the beaming machine several times during the process and put on the appropriate mark, either by paint, by inscribing it, or some other means. This, in itself, means a fair problem and we feel it would take over 6 months before the beams, properly marked, cycled through for refilling and got back into production. This seemed like a lot of work so we investigated the advantages. On analyzing the total dollars involved we estimated we might improve the accuracy by about $700.

Since our Works in Process Inventory was $350,000. and our Total Inventory, $800,000. this degree of improvement was of no consequence, so the scheme was abondoned. It is easy to see from this, however, that without analyzing the advantages we could easily have proceeded with a lot of effort which could much better be channelled in other directions.

At this time I would like to summarize the advantages of the cost accounting system we are now using. It is not completely put-to-bed, but the background work has been done and additional guidance data is becoming available. The system provides the following:—

1. Monthly inventory which permits us to take off our Profit & Loss position on a monthly basis.
2. Process Costs on a monthly basis which permits us to use up-to-date information in establishing the inventory relieving figures and to provide guidance for our costing.
3. From the process cost we, of course, get labour control data which shows us the cost per lb. or per unit in each process on a weekly basis.
4. Overhead control data which is available on a monthly basis.

It was fairly obvious that the problem of putting the Monthly Inventory or the Monthly Process Cost to work, to provide guidance, is not a great one.

It is, however, a bit of a problem to work out the proper presentation of the overhead and labour control data so that the right amount of data is available in the right place, and presented in such a way that the Supervisor on-the-spot can make use of it.

I am going to divert for a moment and come back later to how we planned to use the labour and overhead control data.

## A Cost Reduction Programme

Last fall whe nwe took inventory and established our profit and loss position for the first six months of our fiscal year ending on September 30th, we were shocked to learn that we had been operating in a loss position by an extent greater than we would have anticipated under the circumstances. As a result of this, we intensified our investigations into methods of getting specific guidance information in respect to what was happening in our business, and on top of this embarked on a cost reduction programme.

In our cost reduction programme we felt it was of primary importance to first of all have everyone aware of the seriousness of the situation, and get maximum participation in our planning to effect improvements.

We first of all explained the problem to the Department Heads and got down to the broad planning of our approach.

We then had a meeting of all the Foremen and solicited ideas from them as to how the problem might be tackled in their own particular areas. The technique we used in doing this, which is called the "buzz session", might prove to be of interest. We have about 30 people in our foremen and department head group, and we broke them down into groups of 6. Each group was to elect their own Chairman, break off and come back in ten minutes with five ways we could effect cost reduction. We found this worked well, and from the group got 27 areas in which to effect cost reduction.

We then advised our Union of the situation and solicited their co-operation. We said we would likely be doing a number of things they normally would resist, but that they could help if they would avoid creating resistance in some of these areas as long as we were not crossing lines of principle.

We then carried it further to the extent of writing a letter to the employees and advising them of the situation.

Now came the problem of getting down to specifics. We formed seven groups which consisted of the appropriate department heads and foremen in each area to investigate the possibilities of implementing the cost reductions suggested in their own areas. We held these meetings twice a week until the whole programme was run through, and out of it, we were able to effect cost reduction which ran up to an excess of $50,000 a year. Some of the things we did are as follows:—

1. Shortened the break period and arranged it so that the foremen had much better control.
2. We purchased some new cleaning equipment which cost $500, but permitted us to release two people.
3. We had the truck driver work inside when he wasn't involved in taking care of necessary transportation and, as a result of this

and other moves, were able to reduce the staff by one more person.

4. In an area we found our watching schedule provided for 23½ hours of watching when the Mill was running. By re-scheduling, we were able to save this time.
5. We arbitrarily reduced floor sweepers from three to two and re-assigned their areas of responsibility.
6. We reduced the floor help in other areas and solicited the support of the remaining hourly paid people, and in some cases, pieceworkers, to pick up the load that was left.
7. We changed the piecework arrangement in some areas in order to provide more practical incentive.

These were some of the main areas of attack and now the problem was to keep the cost reduction programme rolling without making it too much of a burden on the administration people. The method we have chosen to do this is to retain the groups we had, perhaps marrying some groups together, appointing a Chairman and Secretary for each group. Their job will be to meet on a monthly basis with an agenda which provides for:—

1. Review what has been done to assure that the decisions were implemented or found practical.
2. Investigate areas where new methods can be studied and implemented to further reduce costs.
3. And here is the one in which you will be most interested — that is to discuss with the foremen on the job and department heads concerned what detail of labour and overhead control data they want and how do they want it presented? In other words, should it be on a cost per lb. or cost per unit basis; should it be weekly or monthly, etc.? This is the way in which we are going to avoid getting information instead of guidance. It is our thought that we will have the foreman responsible in each case to keep a graph or graphs in order to help him get some perspective on his labour control problem.

In conclusion, I would just like to say that I do not believe anyone would be wasting their time in continually reviewing paper work crossing their desk, to be sure that it contains information that can be used for guidance and presented in such a way that it is easy to understand.

## BOOKS FOR FURTHER READING

ANALYZING COSTS FOR MANAGEMENT DECISION—B. F. Beswick, Cost & Management, June 1953.

COST ACCOUNTING'S ROLE IN MANAGEMENT—F. J. Carr, N.A.C.A. Bulletin, April 1st, 1947.

COSTING TECHNIQUES AS AN AID TO MANAGEMENT—Albert E. Bishop, The Canadian Chartered Accountant, July 1951.

COSTING TECHNIQUES—THEIR EFFECT ON MANAGEMENT PRACTICE AND POLICY—David Solomons, The Cost Accountant, January 1954.

# *Accounting for Overhead in Defence Contracts . . .*

By J. H. Laing,
*Hussmann Refrigerator Company, Brantford*

*The Department of Defence Production has standardized the most recent contracts to form three major classifications, and in this article the author reviews one of these classifications, namely, Accounting for Overhead in cost plus and cost plus with savings participation contracts. Mr. Laing gives some valuable pointers regarding procedure and the establishment of an effective means of control.*

ACCOUNTANTS who have been faced with establishing consistent cost accounting practices in connection with government contracts have no doubt observed that the volume of instructive writing on this subject is comparatively scanty. This condition probably stems from two causes: (1) the lack of standard practices among defence contractors due to the diversity of manufactures and types of contracts encountered; and (2) the variety of interpretations which may be drawn from official government circulars dealing with the subject. Frequently, a contractor makes his position more difficult when he believes that he is about to embark on a programme which will require radical changes in his usual accounting practices. This seems to be especially true in cases where the manufacture of aircraft components is concerned. Actually, only minor modifications to existing practices are required, and these are of a nature which tend to increase the accuracy of cost finding when domestic and defence production is concurrent.

## Types of Contracts

While numerous types of contracts have made their appearance during and after World War II, the Department of Defence Production (which was established as a government department by the House of Commons in March, 1951) has standardized the most recent to form three major classifications.

1. Fixed price.
2. Cost plus a percentage of cost.
3. Cost plus a percentage of cost with participation in savings.

The fixed price contract is by far the most common, and is usually secured by the firm submitting the lowest tender. However, the Department also considers other features, such as the locality from which tenders are received and the reputation for efficiency of the firms bidding for the contract. The rarest type and I suppose the most undesirable, as far as the Department is concerned, is the cost-plus form of contract. Placement of this type of order enables the Department to exercise little or no control over ultimate costs. However, in cases where the product has never before been made in Canada or where numerous technical problems are involved, it serves as an equitable

arrangement until some experience on the job has been established, and some sort of incentive can be added. The third type is a modernized version of the old cost-plus contract. It has an incentive clause attached, which induces the contractor to keep his costs at a minimum in order to participate to the fullest extent in the profits. Usually the amount of guaranteed profit available on this type is calculated as a percentage of a "target" or goal cost, with the added feature of offering a share of the amount by which the goal cost exceeds actual cost.

It is the author's intention to review in this article, some methods of accounting for overhead in cost-plus and cost-plus with savings participation contracts. It is felt that fixed price contracts present no particular problem, as these are usually placed for goods which are the regular product of the contract recipient.

Regardless of the type of contract negotiated, it is an absolute necessity that the accountant be familiar with every article of every clause incorporated in the final agreement. Such things as the responsibility for placement of fire insurance coverage, delivery schedules and methods of delivery should be as well understood as procedures for cost reimbursement and profit determination. This is especially important where contractors are awarded more than one contract and where production on the contracts is simultaneous.

Before production and record keeping has actually begun, the accountant should thoroughly familiarize himself with the Department of Defence Production Memoranda DDP-31 and DDP-26. Contained in these two circulars are practically all of the Department's official rulings and which may well serve as a guide in establishing subsequent accounting methods.

It is well to note here that, unless a completely departmentalized system of cost accounting is already in use, the establishment of such a system is not recommended. The tremendous volume of detail involved in allocating and distributing items of overhead outweighs the advantages of this procedure, especially when simpler and less burdensome methods are available and acceptable to treasury cost auditors.

The allocation of general factory expenses on the basis of the ratio of direct labour dollars expended on defence work to total direct labour dollars spent on defence and domestic production combined, is usually acceptable and provides an equitable method easily obtained. However, in some cases where the work requires an extremely high concentration of machine work, or the use of skilled and highly paid craftsmen, this method may prove unsatisfactory, and so the district office of Cost Inspection and Audit should be consulted in this regard.

The method of allocation outlined above is based, of course, on the assumption that manufacturing expenses will be incurred on defence and domestic production in roughly the same proportions as is direct labour. However, there are certain expenses which may not follow this assumption. A few of the more common are: inspection labour,

expediting labour, idle time, handling material labour and repairs to tools and dies. These may be far from equitably distributed on the direct labour method and require special treatment. However, as a rule, treasury auditors frown upon deviation from the direct labour method, unless it can be proved that an item such as inspection labour is very heavily applicable to defence work, and the amount applying to domestic business is negligible. Nevertheless, this is sometimes the case and the contractor will be allowed to accumulate actual charges pertaining to defence work and claim this amount as a direct charge. It should be remembered, however, that this amount must be eliminated from overhead, before an allocation is made on the balance of expenses and that (in this case) no part of inspection labour spent on domestic work will be allowed as a cost.

It follows that certain expenses are incurred 100% on civilian business and if it can be proven that this type of expense has no bearing in performing the contract, it will probably be eliminated. Examples are: packaging expense, service expense, repairs to product, spoilage and definitely accelerated depreciation, whether it applies to machinery and equipment used in civilian or defence production.

Let us assume then that the statement below represents factory expenses of the XYZ Company (which holds a defence sub-contract) for the month ended December 31st, 1953, and that we are faced with allocating these expenses to both defence and civilian business. We know that inspection and expediting labour should be a direct charge to defence work because this type of labour is not encountered in our regular domestic production. It is also apparent that packaging supplies and spoilage expense has no bearing on defence work and that accelerated depreciation is not allowed as a cost.

The method illustrated in Fig. 1 allows individual treatment for expense accounts and provides a fairly simple, yet accurate method of allocation. The amount of overhead thus found to be the share borne by defence work may apply to more than one contract and a further distribution is required. This can easily be obtained using direct labour as the factor for distribution.

The method illustrated allows individual treatment for expense accounts and provides a fairly simple, yet accurate method of allocation. The amount of overhead thus found to be the share borne by defence work may apply to more than one contract and a further distribution is required. This can easily be obtained using direct labour as the factor for distribution.

XYZ COMPANY LIMITED

STATEMENT OF MANUFACTURING EXPENSES FOR THE MONTH ENDED DEC. 31st, 1953

| | Total Exp. | Applic. to Cont. Only | Applic. to Dom. Business Only | Remaining To Be Allocated | Contract Portion 60% | Dom. Portion 40% | Total Charges Contract | Total Charges Domestic |
|---|---|---|---|---|---|---|---|---|
| Fact. Mgmt. Sal. | 12,000 | — | — | 12,000 | 7,200 | 4,800 | 7,200 | 4,200 |
| Fore. Sal. | 18,000 | — | — | 18,000 | 10,800 | 7,200 | 10,800 | 7,200 |
| IND. LABOUR | | | | | | | | |
| Inspection | 6,000 | 6,000 | — | — | — | — | 6,000 | — |
| Handle Mat. | 4,000 | — | — | 4,000 | 2,400 | 1,600 | 2,400 | 1,600 |
| Idle Time | 1,000 | — | — | 1,000 | 600 | 400 | 600 | 400 |
| Expediting | 4,000 | 4,000 | — | — | — | — | 4,000 | — |
| Clerical | 1,000 | — | — | 1,000 | 600 | 400 | 600 | 400 |
| Electricity | 1,000 | — | — | 1,000 | 600 | 400 | 600 | 400 |
| Deprec. M. & E. | 22,000 | — | — | 22,000 | 13,200 | 8,800 | 13,200 | 8,800 |
| Accel. Dept. | 8,000 | — | 8,000 | — | — | — | — | 8,000 |
| Mfg. Supp. | 9,000 | — | — | 9,000 | 5,400 | 3,600 | 5,400 | 3,600 |
| Wareh'g & Truc'g. | 3,000 | — | — | 3,000 | 1,800 | 1,200 | 1,800 | 1,200 |
| Water | 200 | — | — | 200 | 120 | 80 | 120 | 80 |
| Packing Exp. | 4,000 | — | 4,000 | — | — | — | — | 4,000 |
| Misc. | 2,000 | — | — | 2,000 | 1,200 | 800 | 1,200 | 800 |
| | 95,000 | 10,000 | 12,000 | 73,200 | 43,920 | 29,280 | 53,920 | 41,280 |

| | | | |
|---|---|---|---|
| Direct Labour— | Contract | 28,800 | 60% |
| | Domestic | 19,200 | 40% |
| | Total | 48,000 | 100% |

Shortly after a sub-contract has been awarded, it is usual for a representative of the District Treasury Office to make a visit to the plant of the contractor to study the overhead structure, and determine an overhead rate which will be satisfactory for purposes of claiming overhead month by month. This pre-determined or standard rate is based on the sub-contractor's experience over the past year or perhaps more, and usually reflects overhead as pertains to domestic production. As a result in the majority of cases, the overhead allowed for progress claims is considerably less than that encountered when defence production is initiated. The additional indirect labour and other general manufacturing expenses necessarily expended on defence work tend to inflate the over-all manufacturing overhead to produce a much higher rate than before experienced. This fact is realized by all accountants who have had experience in the field. However, some method for reimbursing the sub-contractor progressively for his overhead must be devised, and the rate established by the Department should be satisfactory until such time as experience shows that a revised rate is required. Some prime contractors insist that the overhead as claimed using the standard rate must be adjusted monthly to agree with the expense actually incurred. If this is the case, there is no problem concerning the suitability of the standard rate because the current claim must adjust the previous month's claim to actual, resulting in no accumulation of variances. While this method is accurate and avoids accounting for variances, it is not always possible to follow it.

Most sub-contractors require reimbursement for production expenses as soon after the close of each month as is possible, and actual results cannot be obtained for perhaps two to three weeks. In these cases, the standard overhead rate is used for perhaps six months or more before an adjustment is required. If the monthly variances are large, a change in standard rate should be applied for, in order to avoid the accumulation of a large receivable or liability.

The monthly entries can be handled very nicely through the use of an account we will call Defence Contract Variances. The accountant will debit this account with purchases of material, direct labour and actual overhead applying to defence contracts, as determined through allocation discussed earlier, plus fixed fees for the month. When the progress claim is prepared, he will make an entry to debit Accounts Receivable and credit the Variance Account, with the materials purchased as above, the direct labour, and factory overhead determined at the standard rate, plus fixed fees for the month. This, of course, leaves a balance which represents the variance of actual overhead to standard, and may be accumulated in this manner monthly until an adjustment is desired. It is recommended that the account be shown separately on the Balance Sheet either as a Current Asset or Current Liability, and that a foot-note be added to explain its purpose.

Very frequently, overhead is from 100% to 250% of direct labour, and is therefore that much more important than the direct labour itself. The method of distributing overhead here is not applicable to all cases, and a correct and equitable method should be the sub-contractor's first concern. Government auditors will test the method, using some of these questions.

1. Are costs which are unallowable under terms of contract or government regulations segregated from costs to be apportioned to government contracts?
2. Where overhead items are claimed as a direct cost of the contract, are other costs of the same nature excluded from the overhead pool for allocation to government contracts?
3. Are adjustments resulting from physical inventories of supplies and indirect materials entered in the cost records?
4. Are acceptable bases established for apportionment of indirect expenses?
5. Is a comparison made of monthly totals of each overhead account with previous monthly totals to determine unusual increases or decreases, and reasons therefore?
6. Are year end adjustments normally of such a nature and amounts as not to distort cost of government contracts?
7. Are significant adjustments of prior period's transactions apportioned between government and domestic work in the ratio existing at the time of the original transaction?
8. Are incomes (arising from indirect costs) and other credits considered before the allocation of indirect costs?

**Pre-production and Tooling Expenses**

In many cases sub-contractors find it necessary to re-arrange their facilities, install new machines and make changes to plant lay-out in order to process a government contract more efficiently. Provided authority has been given by the prime contractor, these expenses will be considered. The old question: "Is it expense or a capital outlay?" plagues us here, and care must be taken to give each case special attention. If new machinery is required and it is of a type peculiar to defence production, it will probably have little or no residual value to the sub-contractor when the contract is completed, and so capital assistance should be applied for.

As a rule, preliminary expenses which are similar to those charged to overhead accounts will not be allowed as a direct cost of the contract, but added back as part of the overhead pool.

In cases where special tooling is manufactured, the sub-contractor must maintain accurate labour records and be ready to support the changes with individual job records and other satisfactory evidence.

### Selling Expenses

Under the heading "General Elements of Cost", Costing Memorandum DDP-31 issued by the Department of Defence Production, states flatly " . . . there shall not be included as cost any of the following:" — selling expenses. While this concise statement seems to leave no avenue for escape, a review of selling and administrative expense account classification may prove to be of value. As ruled in DDP-31, treasury auditors are prepared to accept as legitimate cost, no part of selling expenses other than advertising in regular trade journals. The Department argues that expenses normally considered to be selling expenses need not be incurred either in the acquisition of defence contracts or the fulfillment of them.

However, in many cases, sales department expenses which appear in financial statements include some items which do not apply to the selling function alone. Some examples are: stationery, postage, telephone and telegraph, and salaries of employees who perform semi-administrative tasks. If it is the usual practice of a contractor to allocate items such as stationery, postage and telephone costs to Selling and Administrative Departments based on estimated usage, he should seriously consider revising the procedure to include the entire charge as administrative expense. Obviously, this change in method will result in considerable advantage to the contractor and will not be questioned by treasury auditors, unless the change is made after commencement of production on defence work. It would not be advisable to effect the revision while defence work is in process, as the question of evasion may be raised by the auditors. In some cases, employees whose salaries are charged as selling expense perform duties outside the realm of the sales department. One example is the case of a secretary who acts for the General Manager as well as the Sales Manager. If her salary is not already allocated on the basis of estimated time spent for each function, it certainly should be done so as to recoup a fair portion of this expense as a cost. There are other similar cases which deserve attention.

### Administrative Expenses

Expenses which are generally accepted as relating to the administration of the business are accepted. Provision for bad debts, research and development costs (on domestic products), royalties, entertainment and the like are not allowed. Retaining fees for legal and other professional advice are usually ruled out as are expenses resulting from litigation. Fees for the services of management consultants and accounting specialists are disallowed unless prior consent is obtained from the Department.

## ACCOUNTING FOR OVERHEAD IN DEFENCE CONTRACTS

It is imperative that the accountant demonstrate the highest degree of integrity in his relations with the government. He must be willing to co-operate actively with the auditors and build up a spirit of confidence in the records. In part, this can be accomplished by establishing effective means of control to insure that automatic checks and balances are maintained and that sound business and accounting practices are established and supported. It is wise for the accountant to be receptive to the auditors' recommendations for improvement of accounting practices and audit controls, and to demonstrate a willingness to take prompt and effective action relating to the recommendations if they are reasonable.

Much embarrassment, confusion and friction can be avoided if a written record can be obtained from the Department as to allowability of costs not clearly defined in the contract or regulations in effect. The accountant can master the problems of overhead cost with intelligent analysis and hard work. Detailed analytical attention to this component of cost will aid in the drive for delivery of a quality product on schedule, with a fair profit to the contractor.

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### BOOK FOR FURTHER READING

DEALING WITH DEFENCE CONTRACTS—Kenneth P. Farmer, Cost & Management, December 1951.

# Student Section . . .

*At the January meeting of the Calgary Chapter, four candidates for Registered Membership offered a critical appraisal of the course of studies and thesis requirements for R.I.A. qualification. Three students dealt with a different group of subjects, and one, the thesis.*

*Because of the interest that these papers will hold for the Student body, they will be published in consecutive issues. The Editor invites student comment on any or all of these papers.*

**BUSINESS MATHEMATICS, INDUSTRIAL LEGISLATION, INDUSTRIAL ORGANIZATION AND MANAGEMENT — Why They Are In the Course, Their Value to Me — by Miss M. Douma, Student Member, Calgary Chapter.**

Since I have obtained much real pleasure and benefit from the studies in this course, and the encouragement of the members, it would be nice to pass on to other students some idea of what they can look forward to. A real interest in a subject is often of more value than initial talent, and if one looks forward to taking a certain subject and has some idea of what to expect, one is well on the way to making it a worthwhile study.

Perhaps we start on this course, not with the idea of obtaining an R.I.A. degree, but of brushing up on our business school bookkeeping, or to help us in our jobs in accounting work. The list of subjects that confronts us looks rather stiff. Of course we'll take the accounting, and find out about the cost accounting — but what about those other subjects — Bus. Maths., Industrial Legislation and Industrial Organization and Management.

These appear at first to be enrichment material, no doubt of value, but are they really worth the extra year or two of study and work?

There is no doubt that all students who have completed these subjects as well as the accounting subjects will agree that they are very much worthwhile, and that they should be added to rather than omitted.

Let's consider them separately.

In the June 1954 issue of C. & M., there is a very good article by Kenneth Byrd, Prof. of Accounting at McGill, on "Education In Industrial Accountancy". Professor Byrd discusses briefly the subjects he considers should be included in such an educational programme and while he would add to the courses, he hints that Business Maths. should be covered in the high school course rather than included in the R.I.A. course. If Bus. Maths. were part of the high school curriculum, there would certainly be no need to repeat it. But the tendency in high school courses seems to be to cut down on the maths., so our best plan seems to be to take it in our R.I.A. course. Other students who took the maths. agreed that the information was an essential part of business training. High school algebra, etc., will help in studying this subject. However, one of the attractive features of this course is that educational requirements do not bar anyone from the opportunity of taking this training. It is desirable to have completed high school, and no doubt college education gives greater advantages, but interest in accounting and business subjects, and willingness to study are the only essentials.

The most helpful items in this course? First, a review of certain fundamental fractions, decimals, square root — a review we could do with periodically. Then we learned something of the value of money — not in the usual sense of whether a new hat or a car is worth the money, but what is a 2% 10 day discount really worth, and conversely, how much discount can be offered when the earning power of money is known. The same applied to interest — the effective rate when interest is compounded periodically. It amazed me, and still does.

## STUDENT SECTION

If our knowledge of the uses of logarithms had been short and not too sweet, and limited to use in trigonometry, here was a practical use in business for them.

And the formulaes that look so meaningless turned out to be wonderful short cuts with the aid of the tables, to enable one to calculate in a short time, the present value of annuities, the amount of an annuity at the end of the term, the price of bonds, applications to sinking funds, and amortization.

Short cut methods were useful, especially the contracted method for division. It's handy when working out percentages with larger numbers, since not all office machines will do division for you.

We won't use all this information in our daily work — that depends on the jobs we do, but it is surprising how a recollection of how to solve some problem, or use some formulae, will enable us to look it up and put it to use when the occasion arises.

Then the Industrial Legislation course. This course can be taken by correspondence only in Calgary, and that seems regrettable. The Dept. of Extension of the University has, for a couple of years, given a series of ten lectures on Commercial Law. They were conducted by two lawyers, and covered many of the subjects dealt with in our course. Surely another ten lectures on the Industrial Legislation—Trade Unions, Labour Acts, etc., would make an excellent lecture course, with the advantage of discussion on many topics, and emphasis being placed on our Alberta Laws, as the latter is impossible when the correspondence course is used by students all across Canada.

An elementary knowledge of business law should perhaps be part of everyone's training, since everyone makes some contracts, even if verbal ones, writes cheques, does banking, has connection with limited companies, is employed or does the employing, buys or sells. So it is certainly a necessity for an accountant to have this elementary knowledge. The course cannot cover all the things we may run up against, but it gives us some idea, and even a very limited study will steer us to legal advice before there is some untangling to do.

I liked the advice to students in one of the News Letters — "A student should not rely upon common sense as a basis for ascertaining a particular point of law. If law is common sense, it is only so in retrospect. One cannot work from common sense to law, though he may often work the other way." Maybe we can work the other way — to common sense through this study.

As labour relations, trade unions, agreements, are always in the news, we should know something about this half of the course, which is equally important. We will have more understanding of some of the points involved in labour disputes, for labour relations affect every business, directly or indirectly.

And the third subject — Industrial Organization and Management. It sounds like a big subject, and it is. In a brief winter's course, only essentials could be touched on. The text used was not too satisfactory to instructor or students, but this course has been re-written and another text is in use which is more suitable.

And why should this subject be in a cost accounting course? We can get so absorbed in our own particular field that it is a good thing to step back and get a look at the whole situation. Perhaps more important than seeing ourselves as others sees us is to appreciate the problems of co-workers, and of management. A brief study in Industrial Organization and Management helps us to do this. If

you have always worked for a large corporation, you take some things for granted, such as the plant lay out, the organization plan, job evaluation, merit systems, budgets. However, to some of us, this was new, and we got an entirely revised opinion of the problems of management, which ranged from plant locations and types of structures, to the uses of reports.

The purposes and scope of other departments, as purchasing, personnel, were considered, and problems of job evaluation, merit rating, motion and time studies had new meaning.

The topics were all interesting and this subject, if it is not becoming more important, is getting more attention. There are many articles in business magazines and other publications based on the problems of management, and they make good reading when you have an inkling, through the study of this course, on the principles at the back of the problems. If Cost & Management, during the first year or two, seemed pretty discouraging, it becomes very readable after a while, and many of the articles cover management problems.

There is a relationship between the subjects in the course — these three with the other four accounting subjects. The study of one will aid in the study of the other, e.g. in the Maths., the various methods of depreciation are taken from a financial angle. There is no overlapping when this subject is taken in the Accounting 2, since the accounting considers the records and entries, and having studied the topic in one subject, one is better prepared to get the most out of it.

This applied to budgets — considered in different angles in Industrial Organization, and in Advanced Cost: The Break Even point taken in Accounting 2, as well as Cost Accounting and Industrial Organization, and after realizing that there is still much more to it than we had grasped, it could be profitably considered a fourth time.

To return to the advantages of these subjects to me. Aside from the information gained from each subject, it is impossible to separate them from the others in considering the advantages. These studies opened up a new field of interest to me, and I have been very glad I took the opportunity to follow them through. I discovered I liked to study, and the discouragement and hindrance were overbalanced by the pleasant features. We looked forward to the lectures and classes and study in the winter, and were surprised and pleased at the end of each term to realize how much we had learned. We were also amazed to find how much we still did not know, but if we wish, we can continue studying along the same lines, with lots of opportunities offered by this society, and by other means.

When these studies have a practical value in daily work, their value is more than doubled. Our work is more interesting, we can do a better job, and we may get a better job.

I think the advantages to me will have been the same to other students who took the course, emphasis being on one point or another, depending on the different interests and lines of work. And I am sure any student who carries through the same programme will have equal, or greater satisfaction in having undertaken a worthwhile study.

## FUNDAMENTALS OF COST ACCOUNTING — 1954

**QUESTION III (25 marks)**

Jones Manufacturing operates a continuous process plant producing a single product which passes through three operating departments. There is no opening work-in-process inventory.

There were put into production in Dept. 1 — 37,000 units.

Completed and on hand in Dept. 1 — 2,000 units.

In process Dept. 1 — 8,000 units — 100% complete as to material, 50% complete as to labour and overhead.

In Dept. 2 there are 8,000 units in process 80% complete as to labour and overhead.

In Dept. 2 there were 2,000 units lost in production.

In Dept. 3 there are 3,000 units 50% complete as to labour and overhead.

The cost for the month:

| | Dept. 1 | Dept. 2 | Dept. 3 |
|---|---|---|---|
| Material | $5,550 | | |
| Labour | 4,950 | $1,170 | $2,325 |
| Overhead | 2,475 | 585 | 2,325 |

A—From this information you are required to prepare:

(1) A summary cost of production report showing:
  (a) The costs by elements and by departments.
  (b) The value of the work-in-process.
  (c) The work completed in each department.
  (d) The quantity received in each department.
  (e) The disposition of the units received in each department.

(2) The journal entries showing the cost of production and the transfers for each department.

(3) The work-in-process in each department analyzed by elements and by costs for each element.

B—What are the alternative methods of handling lost units?

**SOLUTION TO QUESTION III A (2)**

| | Dr. | Cr. |
|---|---|---|
| Work in Process — Department 1 | $12,975 | |
| Stores | | $ 5,550 |
| Accrued Payroll | | 4,950 |
| Applied Manufacturing Overhead | | 2,475 |
| Finished Goods — Department 1 | 750 | |
| Work in Process — Department 1 | | 750 |
| Work in Process — Department 2 | 10,125 | |
| Work in Process — Department 1 | | 10,125 |
| Work in Process — Department 2 | 1,755 | |
| Accrued Payroll | | 1,170 |
| Applied Manufacturing Overhead | | 585 |
| Work in Process — Department 3 | 8,160 | |
| Work in Process — Department 2 | | 8,160 |
| Work in Process — Department 3 | 4,650 | |
| Accrued Payroll | | 2,325 |
| Applied Manufacturing Overhead | | 2,325 |
| Finished Goods | 10,920 | |
| Work in Process — Department 3 | | 10,920 |

**SOLUTION TO QUESTION III A (1)**

## JONES MANUFACTURING

### SUMMARY COST OF PRODUCTION REPORT

### FOR THE MONTH ENDING ...................., 19....

| | Department 1 Cost | Department 1 Unit Cost | Department 2 Cost | Department 2 Unit Cost | Department 3 Cost | Department 3 Unit Cost | Total Cost | Total Unit Cost |
|---|---|---|---|---|---|---|---|---|
| Costs for month | | | | | | | | |
| Material .................. | $ 5,550.00 | .150 | | | | | $ 5,550.00 | .150 |
| Labour .................. | 4,950.00 | .150 | $ 1,170.00 | .050 | $ 2,325.00 | .150 | 8,445.00 | .350 |
| Overhead ............... | 2,475.00 | .075 | 585.00 | .025 | 2,325.00 | .150 | 5,385.00 | .250 |
| Lost units ............... | | | | .030 | | | | .030 |
| Total cost for month ........ | $12,975.00 | .375 | $ 1,755.00 | .105 | $ 4,650.00 | .300 | $19,380.00 | .780 |
| From previous department ... | | | 10,125.00 | .375 | 8,160.00 | .480 | | |
| Cumulative total cost ......... | $12,975.00 | .375 | $11,880.00 | .480 | $12,810.00 | .780 | | |
| Costs accounted for as follows: | | | | | | | | |
| Completed and transferred to next department ...... | $10,125.00 | .375 | $ 8,160.00 | .480 | $10,920.00 | .780 | $10,920.00 | .780 |
| Completed and on hand ... | 750.00 | .375 | | | | | 750.00 | .780 |
| Work in process ........... | 2,100.00 | | 3,720.00 | | 1,890.00 | | 7,710.00 | |
| | $12,975.00 | | $11,880.00 | | $12,810.00 | | $19,380.00 | |

### QUANTITY PRODUCTION REPORT

| | Department 1 | | Department 2 | | Department 3 | |
|---|---|---|---|---|---|---|
| Units to be accounted for: | | | | | | |
| Transferred during period . | $ 37,000 | | $27,000 | | $17,000 | |
| Total to be accounted for .. | $ 37,000 | | $27,000 | | $17,000 | |
| Accounted for as follows: | | | | | | |
| Completed and transferred . | $ 27,000 | | $17,000 | | $14,000 | |
| Completed and on hand .... | 2,000 | | | | | |
| Work in process ........... | 8,000 | (50%) | 8,000 | (80%) | 3,000 | (50%) |
| Lost units ................. | | | 2,000 | | | |
| Total accounted for ......... | $ 37,000 | | $27,000 | | $17,000 | |

**SOLUTION TO QUESTION III A (3)**

## WORK IN PROCESS ANALYSIS

| | Department 1 | | Department 2 | | Department 3 | |
|---|---|---|---|---|---|---|
| Material | 8,000x.15 | $1,200.00 | | | | |
| Labour | 4,000x.15 | 600.00 | 6,400x.05 | $ 320.00 | 1,500x.15 | $ 225.00 |
| Overhead | 4,000x.075 | 300.00 | 6,400x.025 | 160.00 | 1,500x.15 | 225.00 |
| Lost units | | | 8,000x.03 | 240.00 | | |
| Previous department | | | 8,000x.375 | 3,000.00 | 3,000x.48 | 1,440.00 |
| Total | | $2,100.00 | | $3,720.00 | | $1,890.00 |

Part (B)

The alternative method of handling lost unit costs to that indicated above is to assign costs to the cost units, and transfer such costs to a manufacturing overhead account, such overhead account being excluded from the departmental costs.

**COMMENTS:**

This problem was well answered. As usual some candidates found some trouble in handling the cost unit costs, as in valuing the closing work-in-process inventories.

## ADVANCED COST ACCOUNTING—PAPER II—1954

### QUESTION I (20 marks)

(a) As Company Cost Accountant prepare a memorandum to the Company's Executive Committee, explaining the use and value of flexible budgets for a manufacturing enterprise.

Describe the procedure in setting up such a budget and illustrate the description by selecting six expense items and explaining how you would determine the budgeted amounts.

(b) Describe how you would determine the breakeven point of this Company.

### SOLUTION TO QUESTION I (a)

This memorandum should be in good form including proper address, heading — and brief introduction; it should be dated.

It should then explain the use of a flexible budget — and its advantages — for which see accounting texts.

The six expense items should be listed—

- (a) Set up as variable or fixed expenses.
- (b) Divide the semi-variable into their fixed and variable components.
- (c) Set up capacity ranges—say 60% to 110%.
- (d) Insert the applicable figures.
- (e) Indicate the necessity of checking with operating department re the results.
- (f) Discuss with Chief Accountant the final decision re the items.

### SOLUTION TO QUESTION I (b)

See Accounting Texts, as to determination of the Break-Even Point.

### QUESTION I—COMMENTS

More students now seem able to supply a reasonable answer to this type of question than was the case when a similar kind of question was put on the examination paper a few years ago. The students are, in many cases, still reluctant to answer the question in the required form — and this part, as well as the material content of the question, is assigned marks. Approximately 50% of the candidates obtained a pass mark on this question.